BEFORE THE STATE CORPORATION COMMISSION
OF THE STATE OF KANSAS

Before Commissioners: Pat Apple, Chair
Shari Feist Albrecht
Jay Scott Emler

In the Matter of the Application of Norstar Petroleum, Inc. for Authorization to Impose a Vacuum on its Hume Bros. Lease located in the NW/4 of Section 34, Township 29 South, Range 41 West, Stanton County, Kansas	)	Docket No. 17-CONS-3403-CVAC CONSERVATION DIVISION License No. 31652

REBUTTAL TESTIMONY

OF

KENNETH WHITE

ON BEHALF OF

WHITE EXPLORATION, INC.

Q. Have you read and are you familiar with the prefiled testimony submitted by Jim Hemmen and by Brady Pfeiffer in this docket?

A. Yes, I have reviewed all of the testimony that has been prefiled by those witnesses.

Q. One of the reasons given by the Applicant Norstar Petroleum, Inc. ("Norstar") for justifying the use of vacuum compression on its wells is that "a vacuum on the casing will result in less gas interference with the pump." Have you seen any evidence presented by Norstar to support their claim that gas interference has inhibited production from the Applicant's wells?

A. No, I have not seen any evidence that pressure was building up in the wellbores of Applicant's wells and inhibiting production.

Q. What types of evidence would you expect to see to support such a claim?

A. I have not seen a well diagram for any of the Applicant's wells. The casinghead gas is being produced up the backside of the wells, that is, that gas is being produced in the space between the tubing and the casing. In my experience and under those circumstances, a pump can gas lock if the pump is set above the perforations in the well. If that occurs, the solution is to move the pump to a depth that is below the perforations and that should fix the problem. Again, I have not seen a well diagram so I do not know where the pumps are set in Norstar's wells.

Q. Is there any other evidence that you would expect to see to support such a claim?

A. Yes, the operator of the well could measure the pressure in the casing of the wells and an excessive casing pressure could indicate that the casinghead gas was inhibiting the flow of fluids from the wellbore. Norstar did not provide any casing pressure readings to support a claim that was occurring.

Q. Have you experienced any similar instances of interference in any of your wells in that area?

A. No, I have not.

Q. Assuming that Norstar is experiencing gas interference in its wells on the Hume Lease, does Norstar need to go to vacuum to resolve that issue?

A. No, the compression that Norstar is presently using, which does not go to vacuum, is sufficient to correct that issue.

Q. Do you see any evidence that Norstar's wells will produce more oil if they are allowed to utilize vacuum compression?

A. No, I do not. In fact, the evidence is to the contrary. The only instance in which vacuum compression has been tested was the test performed by Norstar in 2016. Exhibit D to Mr. Pfeiffer's rebuttal testimony shows the production from the Hume Lease during that period of time that vacuum compression was tested from September 1, 2016 to October 21, 2016. If vacuum compression would enhance production from those wells, I would have expected to see either an increase or at least a flattening of production during that time that vacuum compression was used. Instead, as that exhibit shows, the production continued to decline. Thus, in my opinion, there is no evidence that vacuum compression will result in any incremental addition production. A compressor costs approximately $31,000 to purchase and, as Mr. Pfeiffer testified, costs $1,290 per month to rent; I cannot justify that additional expense without the expectation of recovering additional reserves. Spending more money to recover the same reserves is wasteful and does not make economic sense.

Q. Mr. Hemmen testified that your fears regarding the introduction of oxygen into the gas

gathering system caused by vacuum compression are unsubstantiated, in part, because Norstar had already used vacuum compression and no oxygen issues arose. Is that statement accurate?

A. No, it is not. The only time that Norstar has used vacuum compression was the time it conducted the vacuum test from September 1, 2016, to October 21, 2016. During that test, the wells that were tested were not hooked up to a gas sales line and the gas was vented to the atmosphere. As a result, that test does not prove that oxygen will not be introduced into the gas sales line as a result of Norstar's use of vacuum compression. Mr. Pfeiffer testified that the compression currently being used (which started in August 2017) has a device that regulates the compression and prevent the imposition of vacuum conditions.

Q. Mr. Pfeiffer testified that the decision to use vacuum compression and the associated risk of introducing oxygen into the commercial gas stream is a business decision by Norstar and should not factor into the Commission's decision in this docket. Do you agree with that position?

A. No, I do not agree with his statement. If, as a result of Norstar's vacuum operations, oxygen is introduced into the commercial gas stream being sold to DCP Midstream, then all of the wells that are downstream of the point at which DCP Midstream tests for oxygen will be shut-in until the oxygen problem is identified and fixed. White Exploration and all of the other producers in the area deliver their gas into the DCP Midstream gathering system. If oxygen is introduced into that gathering system by Norstar's vacuum operations, then DCP will shut-in our wells until the leak is detected and fixed. That potential problem associated with vacuum compression, which both

Mr. Pfeiffer and Mr. Hemmen admit exists, can be avoided if Norstar's Application is denied and Norstar uses compression but does not go to vacuum (which does not require approval by the KCC).

Q. Mr. Pfeiffer testified that you are taking the position that vacuum compression will be "an operational and economic failure." Is that your position?

A. No, that is not an accurate description of my position in this docket. I agree that compression can and should be used on wells when it is operationally necessary and financially prudent to do so. As outlined in my prefiled direct testimony, White Exploration is currently using compression on some of its wells in this area where it is prudent to do so, but we are not utilizing vacuum compression. Vacuum compression involves subjecting our wells, and other operator's wells, to unnecessary operational risks and additional expenses that are not necessary. Moreover, as I stated above, I see no evidence that vacuum compression will increase production from these wells – the only time it was tested, it did not. Without some increase in production, I cannot economically justify the incremental cost of adding compression. Finally, as a practical matter, when an offset operator relies upon vacuum compression, the operator of the offset wells will likely receive a demand from its royalty owner(s) to do likewise and will be forced as a practical matter to comply. Simply stated, compression is acceptable but vacuum compression is not acceptable.

Q. Is it your position that "compression will enhance production but those enhancements will cease once a vacuum is imposed"?

A. No, that is not my position. My position is simply that the decision to utilize compression should be made on a case by case basis. As I have stated, White

Exploration is utilizing compression to sell the casinghead gas produced from some its wells in this area and vacuum compression is not necessary to accomplish that purpose. Prior to filing this Application, the production from Norstar's wells dropped off due to mechanical issues and not due to the absence of vacuum compression. In fact, the vacuum compression test that Norstar ran on its wells was a failure. After Norstar corrected the downhole mechanical issues, production returned to prior levels – not because of vacuum compression. The sole rationale provided by Norstar for needing to utilize vacuum compression is the alleged need to prevent gas interference. However, as I have explained above, Norstar has not presented any evidence of gas interference in its wells.

Q. Does that conclude your rebuttal testimony?

A. Yes, that concludes my rebuttal testimony, but I reserve the right to supplement my testimony if any additional information becomes available.

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CERTIFICATE OF SERVICE

The undersigned hereby certifies that on the 1st day of December, 2017, he caused a true and correct copy of the foregoing Rebuttal Testimony of Kenneth White to be filed with the Kansas Corporation Commission, and that he caused a copy to be served via electronic mail to the following parties:

Steven D. Gough
Withers, Gough, Pike & Pfaff, L.L.C.
200 West Douglas, Suite 1010
Wichita, KS 67202
sgough@withersgough.com
Attorneys for Norstar Petroleum, Inc.

Jon Myers
Kansas Corporation Commission
266 N. Main, Suite 220
Wichita, KS 67202-1513
j.myers@kcc.ks.gov

Michael Duenes
Kansas Corporation Commission
1500 SW Arrowhead Road
Topeka, KS 66604-4027
m.duenes@kcc.ks.gov

s/ David E. Bengtson
David E. Bengtson